Better Buildings® CHALLENGE
U.S. DEPARTMENT OF ENERGY

EDUCATION PARTNER

DELAWARE STATE UNIVERSITY

Implementation Model: On-Balance Sheet, Off-Debt Capacity Performance Contracting

ORGANIZATION TYPE
Public University

BARRIER
DSU faced strict debt capacity limits set by the State of Delaware, making it difficult to borrow sufficient capital to implement a broad program of energy efficiency projects on campus

SOLUTION
DSU worked with state regulators to create a unique "on-balance sheet, off-debt capacity" approach; working within the constraints of existing accounting principles, DSU obtained permission to utilize previously restricted appropriations to create a revenue-neutral debt structure thereby allowing large-scale bond financing of energy efficiency through a guaranteed energy savings agreement (GESA)

OUTCOME
DSU has helped pioneer a unique financing approach for state universities, funding efficiency projects at a total cost of $19.3M with expected savings of $24.6M over 20 years

Overview

Delaware State University
SINCE 1891
Making our mark on the world

Like many state universities, Delaware State University (DSU) faces strict limitations on the amount of debt that it can take on. This made it difficult to borrow sufficient capital to finance capital-intensive energy efficiency projects, even though energy audits indicated a potential for large savings and a need to address deferred maintenance. To overcome this barrier, DSU worked with a variety of

stakeholders—including the Office of the Governor, State Senate Finance Committee, Bond Council, State Office of Management and Budget, financial advisors, external auditors, and the state's Sustainable Energy Utility (SEU)—to develop a new approach. Utilizing previously restricted funds the University was able to create a revenue neutral transaction that did not affect the debt capacity. The end result was a unique "on-balance sheet, off-debt capacity" transaction, in which bond financing totaling $19.3M ($11.3 principal + $7.4M debt service + $0.7M monitoring and verification over the life of the contract) was used to establish a guaranteed energy savings agreement (GESA) with Johnson Controls Inc. (JCI). A total of $24.6M in savings over 20 years are guaranteed under the GESA, with a net savings of $5.3M for DSU.

Delaware State's Playbook

Policies

Key drivers of DSU's energy efficiency efforts include a call from the Board of Trustees to reduce energy consumption and greenhouse gas (GHG) emissions, membership in the American College and University Presidents' Climate Commitment (ACUPCC), and an executive order issued by the Governor's Office requiring stepped reductions in energy consumption for all state agencies. The Delaware SEU—which issued $70.2M in bonds to finance clean energy investments in 2011—also indicated strong support from the state. However, even though DSU has independent bonding authority, the school was restricted in its ability to tap into bond financing to meet the executive order's requirements due to debt capacity limits imposed by state regulations. DSU was previously restricted from obligating State appropriations to pay for debt service of the University. The release of the restriction on the energy appropriations to pay for debt service allowed the University the flexibility to enter into the GESA bond issuance (see Process below).

Executive Order 18

One of the key drivers behind DSU's energy reduction goals was Executive Order 18: Leading by Example Towards a Clean Energy Economy & Sustainable Natural Environment, passed by the Governor in February 2010. This order requires that, subject to funding opportunities and constraints, all state executive branch agencies shall reduce energy consumption relative to 2008 levels. Required reductions are 10% by the end of FY2011, 20% by the end of FY2013, and 30% by the end of FY2015. The order also requires some renewable energy generation and the application of Leadership in Energy and Environmental Design (LEED) practices in all new construction, renovation, and operation of facilities.

Sustainable Energy Utility

The Delaware SEU's July 2011 Energy Efficiency Bond was the first in the country to solely finance clean energy investments. This inaugural issuance of bonds on behalf of state agencies totaled $70.2M, backed by Citi (a BBC Financial Ally). The economic incentive for agencies to participate became compelling thanks to broad support from state officials, who passed legislation saying agency appropriations cannot be reduced when an agency conserves energy and ends up with more cash on its books as a result (see Outreach below). State agencies that have contracted energy service companies to implement efficiency measures with this bond financing include the Department of Correction; the Department of Services for Children, Youth and Their Families; the Office of Management and Budget; Delaware Technical Community College; and DSU. DSU was the first state agency is to use these funds through a guaranteed energy performance contract.

Existing Debt Capacity Limits

DSU was initially restricted in its use of this bond financing due to debt capacity limits. Bond financing is typically considered an "on-balance sheet" activity (as opposed to "off-balance sheet" financing methods such as operating leases), meaning that it is placed on the institution's books as debt and therefore subject to debt capacity limits. These limits are imposed by bond rating agencies (e.g. S&P, Moody's), which use debt capacity as a measure of an organization's ability to meet debt service obligations in the future. In the case of DSU, the debt capacity limit was set in the early 1990's such that annual debt service payments cannot exceed 14% of unrestricted current funds (UCF)—defined as total operating revenues net of scholarships, less federal grants, plus non-operating revenues. In other words, DSU was subject to the following financial conditions in any given year:

$$\frac{\textit{Annual debt service payments}}{\textit{Total operating revenues} - \textit{scholarships} - \textit{federal grants} + \textit{nonoperating revenues}} < 14\%$$

At the time of the investments in question, DSU's UCF was about $33.7M with an existing annual debt service of $3.5M, generating a debt service ratio of 10.31%. The desired energy efficiency investment ($11.3M in principal + $7.4M in total debt service + $0.7M in other costs) would have created another $0.9M in additional debt service payments per year, bringing the debt service ratio to 12.91%. This was determined by DSU leadership to be too close to the maximum ratio of 14%.

Process

In April 2011, DSU launched an effort to reclassify bond financing for a GESA as "on-balance sheet" but "off-debt capacity" as part of its Energy Saving Initiative. This change (1) modified bond debt service payments by allowing previously restricted state appropriations to be used in the debt capacity calculation to offset the debt service obligations, so that they would not be subject to the debt capacity restrictions imposed by ratings agencies but (2) kept these payments on the balance sheet to avoid diverging from accepted accounting principles. The university argued that the GESA model has evolved to more reliably predict savings and to hold the energy service company (ESCO) contracted under the GESA liable for unmet savings. Under a bond-financed GESA, the guaranteed savings obtained by DSU would be used (in part) to make debt service payments on the bond principal that made the savings possible in the first place. Therefore, DSU argued that this "self-supporting bonds" model could be considered a cash-neutral transaction and excluded from the debt calculation. This argument required outreach and engagement with a wide range of stakeholders before it was accepted (see Outreach below).

The GESA Model

DSU successfully made the case that the GESA model is uniquely suited to an off-debt capacity bond financing approach. Under a GESA, an ESCO implements a series of energy efficiency upgrades and guarantees a certain reduction in energy use, as long as the client adheres to specified operating parameters (e.g. control set points, operating schedules, etc.). If the guarantee is not met due to a failure of equipment and cannot be corrected, the ESCO pays the client the difference per agreed-upon terms. Under a GESA, the client provides the upfront capital to finance energy conservation measures (ECMs), which distinguishes the model from "shared savings" performance contracts under which a third party provides the investment

capital and the savings are split with the client. Shared savings approaches include an energy savings performance contract (ESPC), energy savings agreement (ESA), and managed energy savings agreement (MESA). (See the Environmental Defense Fund's "Show Me the Money" report[1] for a helpful explanation of these models.) Because a GESA guarantees that the client will achieve expected savings (or financial compensation in the event the savings do not materialize), this model presents a much lower financial risk to DSU than traditional ECM investments.

GESA Implementation at DSU

In 2010, when DSU first began exploring a GESA arrangement, the state SEU had approved 12 ESCOs to provide performance contracting services to state agencies. Johnson Controls Inc. (JCI) was selected by DSU from those companies. The first step in exploring a GESA was for JCI to conduct an investment-grade audit of the DSU campus (valued at about $150,000) to identify potential ECMs. The GESA stipulated that in the event that DSU did not engage JCI to perform the ECMs, DSU would pay the full cost of the audit, which would otherwise be conducted at no cost as part of the GESA. Ultimately, DSU signed the GESA with JCI and also provided the upfront capital for an $11.3 million investment in ECMs expected to achieve $24.6M in savings over 20 years.

This agreement constitutes Phase 1 of DSU's Energy Saving Initiative. Measures implemented across the campus include lighting upgrades and controls, vending machine controls, building envelop upgrades, domestic hot water upgrades, demand-control ventilation, boiler controls, computer management systems, and a web-based energy and emissions information management system. Building-specific measures include a boiler replacement, kitchen hood controls, variable frequency drives, roof replacements, chiller replacements HVAC unit replacement, and motor replacement. A strategy for Phase 2 is currently in development.

Outreach

Recognizing that state laws and accounting practices would need to be modified to allow for its bond-financed GESA model, senior leadership at DSU reached out to key state decision-makers. Generally, two changes were required in order to allow the "off-debt capacity" approach proposed by DSU:

1) State law must be amended to include the ability to process debt service payments from restricted energy appropriations.
2) Discussions must be held with rating agencies and external auditors so that investments under a GESA are not included in the calculation of debt capacity and are considered an annual operating expense rather than a long term liability.

Stakeholders involved in the effort to implement these changes included discussions with the Office of the Governor, Senate Finance Committee chairman, Bond Council, Office of Management and Budget (OMB), financial advisors, rating agencies, and the state's Sustainable Energy Utility (SEU). The process was supported by the Governor and one Delaware state Senator who served as the both the Chair of the Senate Finance Committee and the Co-Chair of the SEU, providing high-level leadership and cross-coordination.

[1] http://www.edf.org/sites/default/files/11860_EnergyEfficiencyFinancingBarriersandOpportunities_July%202011.pdf

Changing State Law

Historically, Delaware state law did not allow debt service payments to be processed directly out of energy appropriations. Recognizing that state agencies would need to have a revenue source to make the debt service payments, legislation was enacted to allow the use of previously restricted state operating or energy appropriations to support the annual debt service requirements. DSU worked with the OMB, Governor's Office, the SEU, and other stakeholders to alter Title 29 Chapter 69 of Delaware law (which deals with procurement) to include additional language known as the Subchapter V: the Energy Performance Contracting Act. The Act clarifies several rules and regulations surrounding performance contracting. Most importantly, it stipulates that "a governmental unit may use funds designated for operating, energy, or capital expenditures for any performance contract…" [§ 6974 (c)] and that "grants, subsidies, or other payments from the State to an agency shall not be reduced as a result of energy savings obtained as a result of a performance contract during the life of the contract" [§ 6974 (d)]. The law thus allows DSU and other state agencies to process costs associated with a GESA contract (including debt service payments) directly out of the annual energy budget, without risk that the budget will be reduced as a result of associated energy savings. The energy saving improvements provided under the GESA; freed up sufficient funds to cover the maximum annual debt service payment of $955,209.

Working with Ratings Agencies

Additionally, conversations were held with Standard and Poor's and Grant Thornton auditors to ensure that the financing would be interpreted as a revenue-neutral transaction. The financing is recorded as a long-term debt but the revenue neutral action of the transaction will have no effect on the debt capacity calculation. Rating agencies were also reassured that the State of Delaware, which enjoys an AAA credit rating, would guarantee the bond in the event of unforeseen circumstances. DSU contacts are provided in the "Tools and Resources" section to facilitate communication on the details of replicating this strategy in other states.

Tools and Resources

- Energy Savings Agreements and Their Effects on Debt Capacity Calculation
- The Delaware Energy Performance Contracting Act (Title 29, Chapter 69, Subchapter V)
- For more information on Delaware State's model and its implementation at DSU, contact Amir Mohammadi, Executive Vice President and Treasurer, Delaware State University.

Measuring Success

Measurement and verification (M&V) of savings from ECMs is conducted both by JCI part of the GESA contract and by a third party contractor through DSU to ensure savings are being met. This involves establishing a consumption baseline, adjusting the baseline to account for conflating factors like occupancy and weather, and calculating total savings using metered data. The JCI M&V is included in the $11.3 million project costs, while M&V performed by the independent contractor is paid for by DSU.

Outcomes

The efficiency investments conducted as part of Phase 1 of DSU's Energy Saving Initiative are expected to achieve large reductions in campus-wide energy consumption. For a total bond-financing cost of $19.3M, the ECMs implemented under the GESA will generate a guaranteed total savings of $24.6M over 20 years, with a net savings of $5.3M for DSU. This equates to a simple payback of 14.7 years, but the transaction is considered cash-neutral because guaranteed savings to DSU's energy budget are used directly to pay debt service on the bonds. Phase 1 upgrades are expected to reduce campus-wide energy consumption by 26%, with an additional 7% to 14% savings from the Phase 2 upgrades. Phase 1 upgrades are also expected to reduce DSU's deferred maintenance of $58M by almost 20%, helping to avoid tuition increases in the long term.

Beyond energy and cost savings, DSU's efforts have contributed to a culture change among regulators and ratings agencies. By creating a dialogue among diverse stakeholders, DSU's efforts helped to provide a modern interpretation of accounting principles and tailor state law to facilitate self-supporting bond financing of energy efficiency projects at scale.

Deferred Maintenance

The University contracted Johnson Controls to provide a comprehensive Guaranteed Energy Savings Performance plan, which includes a full range of energy services and energy-related facility improvement measures financed through a guaranteed energy savings contract. Analyzing the latest master planning report, the total estimated maintenance costs over the three terms (short, middle and long term) is $27,312,026.

Based on the first phase of Johnson Controls' study, the deferred maintenance savings are approximately $6,200,000 which revises the deferred maintenance estimate to $21,112,026. A majority of the savings are directly related to increased energy efficiency rather than reduction of first costs. The direct savings generated by the $11,300,000 investment is approximately 55% or $6,200,000.